

Opinion Statement

by **Prof. Biyanka Lyubchova Tornyova, PhD**
Deputy Dean of the Research of the Faculty in Public Health

Referring to a dissertation work for the award of the Doctor educational and scientific degree

Professional direction: 7.1. "Medicine"

Higher education area: 7. Health and Sports

Doctoral Program: "Social Medicine and Organization of Health and Pharmacy"

Topic: "Medical errors in dental practice – a comparative analysis and a dental practice risk management model"

Author: Dr. Tihomira Mitkova Schiller

Form of Ph D: Self-preparation

Department: Department of Social Medicine and Public Health, FPH, MU-Plovdiv

Scientific supervisor: Assoc. Prof. Dr. Nina Musourlieva, DM

The opinion statement was prepared on the grounds of Order No. P-2021/30.08.2022 of the Rector of Medical University-Plovdiv for determining the members of a scientific jury under the procedure.

1. General presentation of the procedure and the doctoral student

The submitted set of documents and materials under the procedure meets the requirements of the Academic Staff Development Act in the Republic of Bulgaria, the Rules for its Implementation and is in accordance with Article 70 (1) of section I - acquisition of the Doctor and of "Doctor of Sciences" degree at MU-Plovdiv, the Rules of Medical University-Plovdiv dated 28.01.2021.

Dr. Tihomira Schiller completed her secondary education at Foreign Language High School "Prof. Dr. Assen Zlatarov" - Haskovo. From 2008 to 2014 she studied Dental Medicine at the Faculty of Dental Medicine of Medical University - Plovdiv and completed her higher education with excellent marks from her semester and state exams.

Dr. Schiller's professional career began in 2014 as a dentist at "Dr. Anton Petev" Dental Practice in Haskovo, where she practised until 2017. In the period 2018-2020, she gained professional experience as a dental doctor in management positions at the Hansen Dental Center in Stuttgart, Germany. Since November 2020, Dr. Schiller has specialized in Orthodontics in the Orthodontic Practice "Dr. Nina Heinig" in Wendlingen, Germany.

In June 2021, she was enlisted as a doctoral student of independent preparation at the Department of Social Medicine and Public Health at Medical University-Plovdiv with Scientific supervisor - Assoc. Prof. Dr. Nina Musourlieva.

She is fluent in German and English and holds the following certificates: DSD level C1 and Cambridge Academy level C1.

Doctoral student Dr. Tihomira Schiller has submitted copies of 3 scientific publications (2 of which are in specialised magazines) on the very topic of the dissertation.

2. Theme relevance

The dissertation presented is dedicated to a significant problem in modern healthcare, which obtains new theoretical and practical dimensions through specific research - medical errors in dental practice. The problem of medical errors is not isolated for Bulgaria. It is observed in Europe and globally. Therefore, the discussion and development of strategies for avoiding medical errors is of great public interest.

The topic of the dissertation is extremely up-to-date in terms of the objective fact that the in-depth study and analysis of strategies for minimizing medical errors and risks, the search and realization of effective and adequate measures to increase the safety of medical and dental care are a prerequisite for prevention serious incidents during the healing process.

3. Knowledge of the problem

The doctoral student's scientific awareness is demonstrated in the content analysis of modern theoretical concepts and practices in the field of medical error.

The author knows very well the literature on the subject, adequately appreciates and creatively uses literary material. Theoretically presented issues are based on a large number, appropriately selected literary sources and authors. Thus, the focus of the theoretical study enables the empirical study to be built on a solid and scientifically substantiated theoretical ground. According to the literary reference, 211 literary sources were used on the proposed topic, 25 of which in Cyrillic and 186 in Latin.

4. The methodology of the study

The study methodology enables the study of all countries and aspects of the problem. Dr. T. Schiller has developed her own research tools, which is a significant contribution to the dissertation. The primary information needed for the purposes of the study was collected by a sociological method - a survey. A questionnaire is used electronically. The questionnaire was developed and translated by the researcher. A pilot study was conducted for the needs of the study in January 2020, including 40 dentists in four regional cities -Sofia, Plovdiv, Varna, Burgas and 30 dental doctors from Baden-Württemberg and Bavaria provinces. The pilot study makes it possible to test and improve the methodology for gaining information, as well as to test the effectiveness of the selected information gathering method.

The actual survey was conducted online between February 2020 - April 2021 based on an identical questionnaire for the two studied groups containing 25 questions. The proposed methodology enables the achievement of the goal, provides representation of the results and is

a prerequisite for full research data and generalizations. The reliability of the questionnaire was established by assessing internal consistency and by testing method.

The systematization, processing and analysis of the data is implemented with the IBM SPSS Statistics 20.0 statistical package. The following statistical methods are applied:

descriptive analysis; Variation analysis for quantitative variables and frequency of quality variables; Non-parametric analysis- test χ^2 criterion of Pirson and exact Fisher test- to check hypotheses for the presence of a connection between variable categories; Correlative analysis. An item-analysis was made, the difficulty and discriminatory power of the questions calculated, and a graphic analysis - for visualization of the results - obtained.

5. Characteristics and evaluation of the dissertation and contributions

The dissertation is the result of a detailed research on the study problem and analysis of its various theoretical and practical dimensions. It is composed of introduction, five chapters, conclusions, recommendations, contributions, bibliography and applications. The dissertation contains 149 standard pages. The study data are richly illustrated in 7 tables, 44 figures and 42 applications, which places an affordable and easily readable foundation of the dissertation.

Dr. Tihomira Schiller shows good awareness of the problem studied. The introduction presents brief information on the relevance and importance of the topic and the grounds for its choice. **In Chapter One, "Literary Overview"** a thorough analysis is made of the concept of "medical error" - formulations and definitions of concepts. Historically, the changes in the perceptions of medical errors are outlined, as well as the reasons for their admission. A critical analysis of the theory of adverse events has been made. The author analyzes and compares the legal requirements and strategies for dealing with medical errors that have been developed in the Republic of Bulgaria and the Federal Republic of Germany. She concludes that there are differences in the legal regulations regarding the rights of patients in Bulgaria and in Germany. In addition, both in Bulgaria and in Germany, there is no mandatory discipline in the curriculum of medical universities dedicated to the topics "patient safety" and "medical error". Emphasis has also been focused on the communication skills of dental doctors, as the gaps in communication between the members of the medical team and the patient doctor are among the main causes of medical error. The analysis of accessible literature shows that the safety of the patient is a problem, the solution of which requires the attention and efforts of both doctors, medical professionals and patients, as well as the system as a whole, including all management structures at a different level.

The next chapter presents the concept of empirical examination. The hypothesis, a purpose, the intended tasks for solving, object and subject of observation, logical units, technical units and signs of observation are logically derived.

The purpose of the dissertation is to study and compare the attitude of dental doctors who have completed their education and practise in Bulgaria and those who have graduated and work in Germany in respect to the topics "patient safety" and "medical error". Four tasks adequate to the goal are formulated to fulfill the goal.

A survey was conducted, with **a total of 351 respondents** covered - 137 dentists, graduates and working in Bulgaria and 149 dental doctors, graduates and working in Germany.

The information collected is sufficient in volume to obtain reliable results. The results are skillfully analyzed and interpreted by the Ph D in the Chapter "**Results and Discussion**". **There are 5 outlined paragraphs:**

1. Socio-demographic characteristics of the contingent - the distribution of the surveyed people by factorial features - age, gender, work experience, type of practice in which they work and the presence of a specialty is established.

2. Analysis of the questions to evaluate the quality of the education in "Medicine" and "Dental Medicine" on the topics "Patient safety" and "Medical error" - the opinion of the Bulgarian and German dentists in terms of acquired knowledge and skills has been established; in terms of essence and causes of mistakes, as well as the ways of avoiding them; The acquired knowledge regarding patient's safety and the obtaining of additional knowledge of postgraduate learning.

3. The role of communication in the team and communication physician-patients in connection with the problem "Medical Error" and "Patient Safety"-studied and analyzed the opinion of the respondents from both groups, regarding their willingness to share with the patient their own mistakes and errors, Committed by other colleagues, as well as the willingness to share and discuss these mistakes with the management of the medical establishment.

4. The role of fatigue and overtime work in making a medical error - a comparative analysis of the opinion of the dentists of the two groups on the influence of fatigue and the production of overtime as risk factors for making medical errors is made.

5. Reporting a medical error and culture of accusation - a thorough analysis of the opinion of the dentists from the two studied groups has been made in respect to the guilt issue – who is to be blamed more for medical errors - the doctor or the support staff; whether the mistake made is a sign of incompetence and the moral question - "Should a mistake be reported that has no negative consequences?" The author strives to find an answer to the problem of the benefit of reporting medical errors and what the role of professional organizations in this field is. An undeniable contribution to the dissertation work is the developed "Dental Practice Risk Management Model (DPRMM) for Bulgaria". It includes 10 main units to achieve improvement in patients' safety and the quality of the manipulations.

The dissertation ends with summary conclusions and justified recommendations.

The following more **important scientific contributions** in this dissertation are worth highlighting, which are theoretical and practical-applied character:

Theoretical contributions

1. The opinion of dentists in Germany and in Bulgaria on the topics related to medical error and safety of patients is analyzed and evaluated.

2. A study has been carried out among the dental medics in Bulgaria and a thorough analysis of the needs and specifics of their activity in terms of management of the quality of health services has been carried out.

Practice-Applicable contributions

1. A Dental Practice Risk Management Model (DPRMM) has been developed to improve patient safety.

2. A free-selective discipline program has been developed and proposed for "Dental Practice Safety " which would contribute to increasing patients' safety.

3. Specific recommendations have been developed to various institutions that would contribute to developing strategies to increase patient safety and reduce the risk of medical error.

The developed Dental Practice Risk Management Model (DPRMM) can be used by the dental medics in Bulgaria to improve the quality of dental services and to reduce risk.

6. Assessment of the dissertation publications

Dr. T. Schiller has appended copies of 3 scientific publications (2 of which are in specialised magazines) on the topic of the dissertation. She is a leading author in all three publications presented. The number and quality of the publications fully comply with the requirements of MU-Plovdiv for public protection and largely reflect the results achieved and the essence of the dissertation.

7. Personal participation of the PhD student

The dissertation work shows that Dr. Tihomira Schiller has taken a successful path of research development, she has acquired experience to conduct research and to interpret the results obtained. In this regard, I appreciate the personal participation of the doctoral student in the dissertation examination and I consider as significant and accurately formulated the scientific contributions and results obtained.

8. Abstract

The Abstract to the dissertation work is drafted according to the requirements and reflects in a condensed form the goals, tasks, the methods used, the results achieved, the conclusions and recommendations made.

11. Critical remarks and recommendations

I have no critical remarks and recommendations for the study and the set of materials.


Conclusion

The dissertation presented is a thorough scientific research that fully meets the current requirements for the acquisition of the Doctor Degree and will contribute to a positive change in the education of students in Dental Medicine. The work shows that Dr. Schiller possesses in-depth theoretical knowledge and professional skills in the scientific specialty "Social Medicine and Organization of Health and Pharmacy" by demonstrating qualities and skills for self-research.

In view of the distinguished merits of the dissertation work, namely the importance of the topic, the methods used, the data obtained with statistical relevance and the rich contribution, I give my positive assessment and I offer the revered scientific jury to award Dr. Tihomira Mitkova Schiller the educational and scientific degree " Doctor " in the scientific program "Social Medicine and Organization of Health and Pharmacy ", in the field of higher education 7. Health and sports - professional field 7.1. Medicine.

26. 09. 2022
Plovdiv

Заличено на основание
Чл. 5 §1, б. "В" Регламент (ЕС) 2016/679

Signature: .....
/Prof. B. Tornyova, PhD/

